



RESEARCH ARTICLE

Food Security: Foundation for a Healthy Nation

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ABSTRACT

The value of food in the existence of any Nation cannot be overemphasized as food is regarded as the hearth beat and nucleus through which a Nation thrives. The food we eat as individuals gives our body the information and materials it needs to function properly on daily basis. Wrong consumption of food has it health implications on the body causing development of diseases such as overweight arthritis, diabetes and heart diseases. As food is regarded as the major source of fuel the body burns to carry out either physiological or physical functions it becomes imperative to ensure that it is made available in its right quantity and quality. Therefore, this paper looked into the concept of health, food and food security, pillars of food security, food security and health implications and challenges confronting food security. The authors recommended among other things that government should diversify the economy channeling the energy of Nigerian teaming youths towards agriculture to ensure food adequacy.

Key words: Food Security: Foundation for a Healthy Nation

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INTRODUCTION

It is no gain saying that food is essential in the existence of any living creature man inclusive. It serves as fuel needed by the body to meet up its daily tasks of which its limited supply could affect the body adversely. Food is normally taken into the body through the digestive tract. Apart from serving the physiological functions of growth, repairing and replacing old or worn-out tissues, produce heat and energy for the work the body does, regulates body functions and keep them in good working order, food serves a social and aesthetic function. In all formal and informal gathering ceremonies inclusive, food constitutes an important item on the order of events. It gives opportunity to meet and talk with people one is either meeting for the first time or old friends. The atmosphere, type of dishes and cutlery with which food is served constitute its aesthetic value. This is why people buy expensive food-eating wares or get their dining rooms expensively decorated. From time immemorial, no nation has ever survived without adequate supply of food for her populace which is an indication that food is the propelling force of any nation on the planet earth. The Food and Agricultural Organization of the United Nations (2003) stated that countries that have reduced hunger often had rapid economic growth specifically in their agricultural sector. These countries are also characterized as having slower population growth, lower HIV/AIDs rate and higher ranking in the human development index. There are strong direct relationship between agricultural productivity, hunger, poverty and sustainability of a Nation. Gbenga (2015) quoting Federal Ministry of Health report of 2014, disclosed that the number of malnourished children in Nigeria is on the high side and that Nigeria has been ranked second after India in the list of countries with the highest cases of malnourished children in the world which accounts for 10 percent of 160 million stunted children globally. This figure poses huge consequences for the future not just for the child but also for the society. Three-quarters of the world's poor live in rural areas and make their living from agriculture. Hunger and child malnutrition are greater in these areas than urban areas. Moreover, the higher the proportion of the rural population that obtains its income solely from subsistence farming without the benefit of pro-poor technologies and access to markets, the higher the incidence of malnutrition (Joachin, Swiminathan & Mark 2003).

According to Modi and Lindsey (2005), the poorer the people are the worse their diet and the more diet-related diseases they suffer from which in turn negatively affect the health of a Nation. Inadequate or lack of food has been a risk factor for major killer diseases in sub-Saharan Africa Nigeria inclusive. Food is a basic human need without which no life can be sustained or become productive. It is worthy to state that the productivity of a Nation is largely measured base on the continuum of her health. Food has a direct impact on our cognitive performance which is why a poor decision at launch could derail an entire afternoon. Modi and Lindsey (2005) posited that inequalities in people's diet can result to inequalities in people's health. Individuals of low income suffer from poor diet as evidenced by lower fruits and vegetables intakes and a higher prevalence of dental caries among children. It is estimated that millions of people, children inclusive live in poverty (National statistics 2005).

Tackling food poverty/insecurity is recognized as key to achieving government targets on reducing inequalities and health problems arising as a result of food shortage. However, actions need to be more than health professionals giving advice to individuals. It must change the food environment that is, accessibility, affordability and culture in which people live. Therefore this paper provides answers to the following questions which determine the focus of this work:

1. What is the concept of health, food and food security?
2. Is there any relationship between food securities versus food insecurity?
3. In what ways does food insecurity affect the individuals' health?
4. What are the basic foundations for food security?
5. What are the challenges to achieving food security?

CONCEPT OF HEALTH AND FOOD

Health is largely a matter of perceptive to many people. Subscribing to a working concept, health is feeling physically good; able to act and react according to some semblance of a reasonable self-image; remaining fit in a passable manner; and weighing in at something near the insurance industry's norms (Bethany 2011). Wikipedia (2015) defined health as the level of functional or metabolic efficiency of a living organism. In human it is the ability of individuals or communities to adopt and self-manage when facing physical, mental or social challenge of which food is the driving force. While W.H.O (1948) indicated that health is a state of complete physical mental and social well-being and not merely the absence of diseases or infirmities although this position has been subjected to controversy as lacking operational value and because of the problem created by the use of the word "complete". Hence, other definitions correlated health as personal satisfaction.

Generally, the context of what an individual consumes as food is of great importance for both one's health status and quality of life. No wonder it is universally accepted that "you are what you eat". Therefore, in maintaining the health of an individual or that of a Nation, adequate food becomes imperative which is based on food availability.

Encyclopedia Britannica (2015) established that food is any substance consumed to provide nutritional support for the body. It is usually of plant or animal origin and contains essential nutrients such as carbohydrates fat, protein, vitamins, or minerals. The substances are ingested by organisms and assimilated by the organisms' cells to provide energy, maintain life or stimulate growth. Historically food is secured through two methods namely: hunting and gathering, and agriculture. Today most of the food energy required by the increasing population of the world is supplied by the food industry. Food safety and food security are monitored by agencies like International Association for Food Protection, World Resources Institutes, World Food Programme, Food and Agriculture Organization and International Food Information Council.

Food is composed of many different chemical substances - macronutrients and micronutrients it may contain colours, flavours, pharmacologically active substances, natural toxicants, additives and various contaminants. The chemical nature of food is changed by storage; preservation and cooking which in turn affect our health.

WHAT THEN IS FOOD SECURITY?

Food security is a phenomenon that is related to the supply of food and individual's access to it. Food security had generated concern over the years. It is evident in granaries with central

authorities in civilizations such as China and Egypt being known to have released food from storage in times of famine. Food and Agricultural Organization of United Nations (2003), defined food security as availability at all times of adequate world food supplies of basic food stuffs to sustain a steady expansion of food consumption and to offset fluctuations in production and prices. Hence food security exists when all people at all times have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life. According to Food and Agricultural Organization (1996) national and international food security is affirmed when household security exists with all her members having access to enough food for an active life. Individuals who are food secured do not live in hunger or fear of starvation. It incorporates a measure of resilience to future disruption or unavailability of critical food supply due to various risk factors including droughts, shipping disruptions, and fuel shortage, economic instability and wars. Gary, Mark, Crisofer and John (2000) indicated in their findings that between 2011 and 2013 842 million people suffered from chronic hunger.

Food insecurity on the other hand is a condition of limited or uncertain availability of nutritionally adequate and safe food or limited or uncertain ability to acquire acceptable foods in socially acceptable ways. Today there is wide spread hunger and food insecurity in the presence of abundance base on the gift of nature. Inequalities in distribution combined with general and pervasive poverty and lack of knowledge about food preference and prohibitions result in food insecurity in Africa Nigeria inclusive. This is so endemic that neither individuals nor communities can overcome the barriers to adequate food supply and access.

FOUNDATIONS OF FOOD SECURITY

W.H.O (2013) states that there are four basic pillars that determines food security which relates to the supply of food through production, distribution and exchange. Food production is determined by a variety of factors including land ownership and use; soil management, crop selection, livestock breeding and harvesting. Crop production can be affected by changes in rainfall and temperatures. The use of land, water and energy to grow food often compete with other uses which can affect food production. Gregory, Ingram, and Brklacich (2005) posited that land used for agriculture can be used for urbanization or loss to desertification, salinization and soil erosion due to unsustainable agricultural practices. Crop production is not the ultimate for any nation to achieve food security alone most especially where food consumers outnumber producers but ensuring proper distribution of available ones which involve storage, processing, transporting, packaging and marketing of food. Hence food-chain infrastructure and storage technologies on farms do affect the amount of food wasted in the distribution process. Poor transport infrastructure can increase the price of supplying water and fertilizer as well as the price of moving food to national and global markets.

Accessibility refers to the affordability and allocation of food as well as the preferences of individuals and households. The United Nations committee on Economic, Social and Cultural Rights (1999) noted that the causes of hunger and malnutrition are often not a scarcity of food but inability to access available food usually due to poverty. It can also increase how vulnerable an individual or household is to food price spikes. Access also depends on whether the household has enough income to purchase food at prevailing prices or has sufficient land and other resources to grow its own food. Family with enough resources can overcome unstable harvests and local food shortages and maintain their access to food. Food and Agricultural Organization (1997) explicated two distinct types of access to food namely: direct access in which a household produces food using human and material resources. Secondly economic access where a household purchases food produced elsewhere. A household's access to enough and nutritious food may not assure adequate food intake of all household members as intra-household food allocation may not sufficiently meet the requirements of each member of the household.

Food utilization symbolizes the metabolism of food by individuals. Once food is obtained by a household, Ecker and Breisinger (2012) were of the view that a variety of factors affect the quality and quantity of food that reaches members of the household. In achieving food security, food ingested must be safe and be enough to meet the physiological requirements of each individual. The utilization of food is by the preparation, processing and cooking of food in the community and

household. Nutritional value of the household goes a long way to determine food choice and whether food meets cultural preferences is important to utilization in terms psychological and social well-being. Access to healthcare is another determinant of food utilization since the health of individuals controls how the food is metabolized. Consequently, education about nutrition and food preparation does affect utilization and the strength of food security.

Food stability being a pillar to food security is seeing as the ability to obtain food over time. This can be transitory, seasonal or chronic. In transitory food security Food and Agricultural Organization (1999) postulated that food may be unavailable during certain periods of time due to natural disaster or drought resulting to crop failure and decrease in food availability. Other factors include civil conflict as currently experience in northern part Nigeria, instability in markets resulting to food-price hike, loss of employment or productivity which can be caused by illness. As a result of these factors households are constantly at risk of being unable to acquire food to meet the needs of all its members.

FOOD SECURITY AND HEALTH

The absence or presence of hunger has been the primary measurement by which many experts assessed food security as it applies to an individual's well-being. Without minimizing the significance of hunger, it is assumed that hunger in a household might be an irregular phenomenon and might apply primarily to one or more persons without being true of the entire household. Undernourishment and malnutrition are two major conditions that cause weight loss, fatigue, stunt growth, and frequent colds. Studies have shown that undernourished pregnant women are more likely to bear babies with low birth weight and the babies are then more likely to experience developmental delays that can lead to learning problems. Iron deficiency anemia is common among hungry and food insecure children on one end of the spectrum and older adults on the other.

Bethany (2011) observed that hunger and food insecurity worsen the effects of all diseases and can accelerate degenerative conditions, especially among the elderly. He stressed that hunger and food insecurity creates psychological responses such as anxiety, hostility and negative perception of self-worth. In an energy and resource-constrained world, diseases like malaria, HIV/AIDs, dengue fever and other infectious conditions from distant places which experts anticipates migrates in reaction to changes in weather patterns could be more prevalent. Hence more frequent incidents of these and other opportunistic diseases are likely to be reported, resulting in the potential to overburden the ability of any medical or public health system that tries to address the problems.

CHALLENGES TO FOOD SECURITY

The challenges to food security in Africa are diverse, multi-factorial and inter-linked. Poverty and food shortage are the main catalysts of food insecurity in the world; unfortunately they occur in a vicious cycle. In 2004, 121 million sub-Saharan Africans lived on less than a meager US\$0.50 a day. People living on less than US\$1.00 per day are unable to pay the prices they would need to buy all of their staple food they require and meat and fish consumption for the many poor Africans is a luxury. Although the share of the population living in extreme poverty in Sub-Saharan Africa declined by more than 10% to 48% between 1999 and 2008, Su-Saharan Africa still has the highest concentration of the ultra-poor in the world as indicated by Fosu (2009). Despite economic growth rate in Africa ditto to Nigeria over the past decade, there is historical evidence that this has not been translated into poverty reduction as effectively as I other developing regions like East Asia and Pacific.

According to Save the Children (2012) report, prolonged drought experienced in certain regions of the continent frustrated the expected reduction in poverty and food security, despite the economic growth experienced. Drought accounts for acute food shortage in the Sahel region of West Africa and the horn of Africa which has resulted in the deaths of tens of thousands of people, while about 18.7 million and 11.7 million people respectively are in need of emergency assistance. The global rise in food prices further compounds this crisis. Food crop production is not increasing at a rate necessary to meet population growth currently averaging 2.4% annually across Africa. Therefore, it is expected that food scarcity will drive up food price in certain regions of the continent.

Currently, United Nations (2013) projections shows a continued increase in population in the nearest future with the global population expected to reach between 8.3 and 10.9 billion by 2050. United Nation population Division estimates for the year 2150 ranges between 3.2 and 24.8 billion; base on these assertions analysts have questioned the sustainability of further world population growth, highlighting the growing pressures on the environment, global food supplies and energy resources. United Nations (2013) submitted that one out of every seven people on planet earth go to sleep hungry on daily basis making people to die of malnutrition and hunger related diseases.

While agricultural output increases as a result of Green Revolution, the energy input into the processing that is energy that must be expended to produce a crop has also increased at a greater rate such that the ratio of the crops produced to energy input has decreased over time. Green Revolution techniques heavily rely on chemical fertilizers, pesticides and herbicides, some of which must be developed from fossil fuel making agriculture increasingly reliant on petroleum products. This has a negative effects base on the current peak of global oil production and subsequent decline of production along with the peak of North American natural gas production which precipitates agricultural crisis much sooner than expected.

Intensive farming often leads to vicious cycle of exhaustion of soil fertility and decline of agricultural yields. Approximately 40% of the world's agricultural land is serious degradation. In Africa if current trends of soil degradation continue the continent might be able to feed just 25% of its population by 2025 as asserted by United Nation's Ghana-based Institute for Natural Resources (2011).

The extreme climate change is foreseen to increase ranging from overnight flood to gradually worsening drought these have much range of impacts on the agricultural sector. By 2040 as postulated by Climate and Development Knowledge Network (2012), almost the entire Nile region which once include large areas of irrigated agricultural land is expected to become hot desert where cultivation is would be impossible due to water limitation. The impacts will include changing productivity and livelihood pattern, economic losses and impacts on infrastructure, markets and food security. This connotes that food security in the future will be linked to our ability to adapt agricultural systems to extreme events.

Inadequacy of water which is already spurning heavy grain imports in numerous smaller countries may soon do the same in larger countries. Water tables are falling in scores of countries due to wide spread of over pumping using powerful diesel and electric pumps, This will eventually lead to water scarcity and cutbacks in grain harvest when this happens, it will almost certainly drive grain price upward Smith (2013).

In addition to extreme weather events, many failed harvest in Africa and other Third World countries were also caused by pests such as desert locusts, cattle diseases and other agricultural problems such as erosion, soil infertility amidst host of others which play a major role in food insecurity. Others include: Military conflicts; Wars and military conflicts worsen food insecurity in African and other Third World countries. They may not be directly responsible for food crises but they exacerbate scarcity of food and often prevent the aid workers from reaching the most affected people.

Lack of emergency plans; History of the severest food crises in the world today shows that many countries were completely unprepared for a crisis of food shortage and unable to resolve the situation without international aid.

In spite of criticism lately, the international community has always send help in form of food supplies and other means of reliefs to save millions of lives in famine affected regions. However it is sad to note that the international aid often does not reach the most vulnerable populations due to a high level of corruption and political instability in most Third World Nations.

Many African and Third World governments encourage production of the so-called cash crops, the income from which is used to import food. As a result, countries which depend on cash crops are at high risk of food crisis because they do not produce enough food to feed their population.

The negative impacts of HIV/AIDs are a serious health concern in the Sub-Saharan African which extremely worsens food insecurity in two major ways in the continent. Firstly it reduces the available workforce in agriculture being the propelling force of food security and secondly, it places an additional burden on poor households.

CONCLUSION

The problems of food insecurity are already a global phenomenon. The inadequate quantity and quality of food affects the health and wellbeing of children, adult and aged in several ways such as having stunt growth, falling sick always, and untimely death. Food insecurity is a huge risk to the growth, health, cognitive and behavioural pattern of those who are in or near poverty. Most behavioural, emotional and academic problems among children could be traced to dietary problems arising from food shortage. Food insecurity can be linked to lower academic grade in malnourished school children, greater problems getting along with peers, poor health status and high prevalence of illness.

RECOMMENDATIONS

1. Individual household should be encouraged to produce her own food. This can be best achieved by making use of available space in our surroundings for gardening. When this is done it will reduce pressure on the already available food and bring about stability in food prices making it avoidable for all and sundry.
2. The government should give consideration to the establishment of food bank just like the ancient Egypt and China had done in the past to combat famine but with a modification of driving the food bank with modern technology. This will avoid wastage in times of plenty harvest and prepare for time of famine when there is shortage of food.
3. Government and NGO'S should assist in the training of subsistence farmers on the best agricultural practices and provide access to modern farm inputs, credit facilities and storage technology to increase farmers' productivity in a sustainable way.
4. Greater commitment should be shown to agricultural research and development while support from private sector investment in agricultural technology should be encouraged.
5. In regions where relief materials such as foods are directed to, government at the local, national and international level should ensure that the relief package get down to the destinations where they are meant for so as to fulfill the purpose of sending them.
6. The youth should be made to see the need to invest their youthful energy into agriculture instead of targeting crude oil as the only way to survival and economic breakthrough.

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